

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listing of claims in the application:

LISTING OF CLAIMS:

Claim 1 (Currently amended) A multimedia playback apparatus,
comprising:

a mass storage device having a multiplicity of blocks of multimedia data stored thereon, said multimedia data including video and audio data;

a cache buffer ~~that stores~~ coupled to said mass storage device for storing a plurality of blocks of said multimedia data , including video and audio data, read from [[a]] said mass storage device, said cache buffer having a capacity for storing a first amount of said multimedia data;

~~a cache manager that controls said cache buffer and that causes the storage device to enter into a reduced power consumption mode when said amount of data stored in said cache buffer reaches a first level; and~~

a track buffer ~~that stores~~ coupled to said cache buffer and having a storage capacity for storing a first second amount of said multimedia data read from said cache buffer; and

a cache manager coupled to said cache buffer and said track buffer for controlling transfer of said multimedia data from said mass storage device to said

cache buffer and from said cache buffer to said track buffer, said cache manager responding to a read request of a particular block of multimedia data fetches said requested block of multimedia data from said mass storage device and fetches additional blocks of multimedia data anticipated being subject to future read requests to substantially fill said cache buffer for transfer to said track buffer and said mass storage device enters a reduced power consumption mode responsive to said cache buffer being filled with a plurality of untransferred blocks of multimedia data to a first threshold level, said mass storage device exiting said reduced power consumption mode responsive to said plurality of untransferred blocks of multimedia data being below a second threshold level, said cache manager replacing blocks of transferred multimedia data in accordance with a priority hierarchy based on at least one characteristic of said blocks of multimedia data.

Claim 2 (Currently amended) The multimedia playback apparatus as defined in claim 1, further comprising:

a demultiplex circuit ~~that receives~~ coupled to said track buffer for receiving said multimedia data ~~therefrom said track buffer;~~

a decode circuit ~~that decodes~~ coupled to said demultiplex circuit for receiving said multimedia data ~~received~~ from said demultiplex circuit to produce decoded multimedia data; and

a render circuit coupled to said decode circuit for ~~to~~ rendering said decoded multimedia data.

Claim 3 (Currently amended) The multimedia playback apparatus as defined in claim 1, wherein said reduced power consumption mode idles said mass storage device.

Claim 4 (Currently amended) The multimedia playback apparatus as defined in claim 1, wherein said reduced power consumption mode spins down a rotary portion of said mass storage device.

Claim 5 (Currently amended). The multimedia playback apparatus as defined in claim 1, wherein said cache manager ~~is configured to~~ causes said mass storage device to enter into a relatively higher power consumption mode when said amount of data stored in said cache buffer falls below a second level transfer a requested block of multimedia data from said mass storage device to said track buffer responsive to said priority hierarchy failing to be exceeded.

Claim 6 (Currently amended) The multimedia playback apparatus as defined in claim 1, wherein said cache buffer is ~~comprised of~~ formed by a volatile memory.

Claim 7 (Cancelled).

Claim 8 (Currently amended) The multimedia playback apparatus as defined in claim 1, wherein said mass storage drive device is an optical storage drive selected from a group ~~including~~ consisting of a DVD drive and a CD drive.

Claim 9 (Currently amended) The multimedia playback apparatus as defined in claim 1, wherein said mass storage drive device is a digital tape ~~recorder~~ drive.

Claim 10 (Currently amended) The multimedia playback apparatus as defined in claim 1, ~~further comprising~~ wherein said mass storage device is disposed in a computer.

Claim 11 (Currently amended) The multimedia playback apparatus as defined in claim 1, ~~further comprising~~ wherein said mass storage device is disposed in an electronic consumer product, including at least one of a set-top box.

Claim 12 (Currently amended) The multimedia playback apparatus as defined in claim 1, wherein said cache manager is configured to retain an address mapping of ~~a unit of data~~ said plurality of blocks of said multimedia data that ~~had been read into~~ is stored in said cache buffer.

Claim 13 (Cancelled).

Claim 14 (Currently amended) A method of controlling a multimedia storage device, the method comprising:

providing a rotating media storage drive with a multiplicity of blocks of multimedia data stored thereon;

storing said plurality of blocks of multimedia data read from ~~[[a]]~~ said rotating media storage drive into a multimedia cache memory responsive to a read request for one of the plurality of blocks of multimedia data;

receiving a scan command; and

if said multimedia data corresponding to said scan command is stored in said multimedia cache, transferring ~~the~~ said corresponding multimedia data from ~~the multimedia~~ said cache memory to a track buffer for subsequent rendering ~~when said multimedia data corresponding to said scan command is stored in said multimedia cache.~~

Claim 15 (Original) The method as defined in claim 14, wherein said scan command is one of a fast forward command and a fast reverse command.

Claim 16 (Currently amended) The method as defined in claim 14, further comprising:

receiving a second scan command; and
reading said multimedia data corresponding to said second scan command from said rotating media storage device ~~if~~ when said multimedia data corresponding to the second scan command is not stored in ~~the multimedia~~ said cache memory.

Claim 17 (Currently amended) The method as defined in claim 14, wherein sub-band data is stored in said ~~multimedia~~ cache memory in synchronization with said plurality of blocks of multimedia data.

Claim 18 (Original) The method as defined in claim 14, wherein said corresponding multimedia data is transferred from said cache to said track buffer by modifying a pointer value.

Claim 19 (Currently amended) A method of processing multimedia data, comprising:

determining that ~~a storage device is reading~~ multimedia data is to be read from a rotating media storage device;

transferring a ~~first~~ quantity of multimedia data from said rotating media storage device to a ~~media cache~~ memory responsive to a read request for a first portion of said quantity of multimedia data, a remaining portion of said quantity of multimedia data being multimedia data anticipated being subject to future read requests;

responsive to once said first quantity of said multimedia data ~~is being~~ stored in said ~~media cache~~ memory, ceasing ~~the~~ further transfer of said multimedia data from said rotating media storage device into said ~~media cache~~ memory and causing said rotating media storage device to spin down and thereby enter into a power saving mode;

sequentially writing portions of said quantity of multimedia data from said ~~media cache~~ memory to a track buffer for subsequent rendering; and

at least partly in response to ~~the~~ a portion of said quantity of ~~said~~ multimedia data yet to be written to said track buffer is stored in the ~~media~~ said cache memory falling ~~to below~~ a first threshold value, causing said rotating media storage device to spin up and thereby exit said power saving mode.

Claim 20 (Currently amended) The method as defined in claim 19, wherein said remaining portion of said quantity of multimedia data includes a plurality of views of at least one image stored in said ~~media cache~~ at the same time memory.

Claim 21 (Currently amended) The method as defined in claim 19, wherein the step of sequentially writing is followed by the step of maintaining said quantity of multimedia data is maintained in said ~~media cache~~ memory subsequent to being rendered for facilitating a ~~after said multimedia data is written to said track buffer so that a user can scan command without rereading said multimedia data stored in said media cache after said multimedia data is read from said track buffer and rendered on rotating media storage device.~~

Claim 22 (Currently amended) The method as defined in claim 19, ~~further comprising storing wherein the step of sequentially writing includes the step of~~ maintaining a DVD menu in said ~~media cache~~ memory during playback of a movie stored on said rotating media storage device ~~DVD~~ so that said DVD menu can be accessed ~~substantially simultaneously by a user without rereading said DVD menu from said rotating media storage device.~~

Claims 23-24 (Cancelled).

Claim 25 (Currently amended The method as defined in claim 19, wherein
said remaining portion of said quantity of multimedia data includes menu data and
video data ~~stored in said media cache at the same time.~~

Claims 26-56 (Cancelled).